



# Volunteer Lake Assessment Program Individual Lake Reports

## ROCKYBOUND POND, CROYDON, NH

### MORPHOMETRIC DATA

Watershed Area (Ac.):	529	Max. Depth (m):	9.3	Flushing Rate (yr <sup>-1</sup> )	0.7
Surface Area (Ac.):	65	Mean Depth (m):	4.5	P Retention Coef:	0.73
Shore Length (m):		Volume (m <sup>3</sup> ):	1,166,500	Elevation (ft):	1055

### TROPHIC CLASSIFICATION

Year	Trophic class
1989	OLIGOTROPHIC
2006	MESOTROPHIC

### KNOWN EXOTIC SPECIES

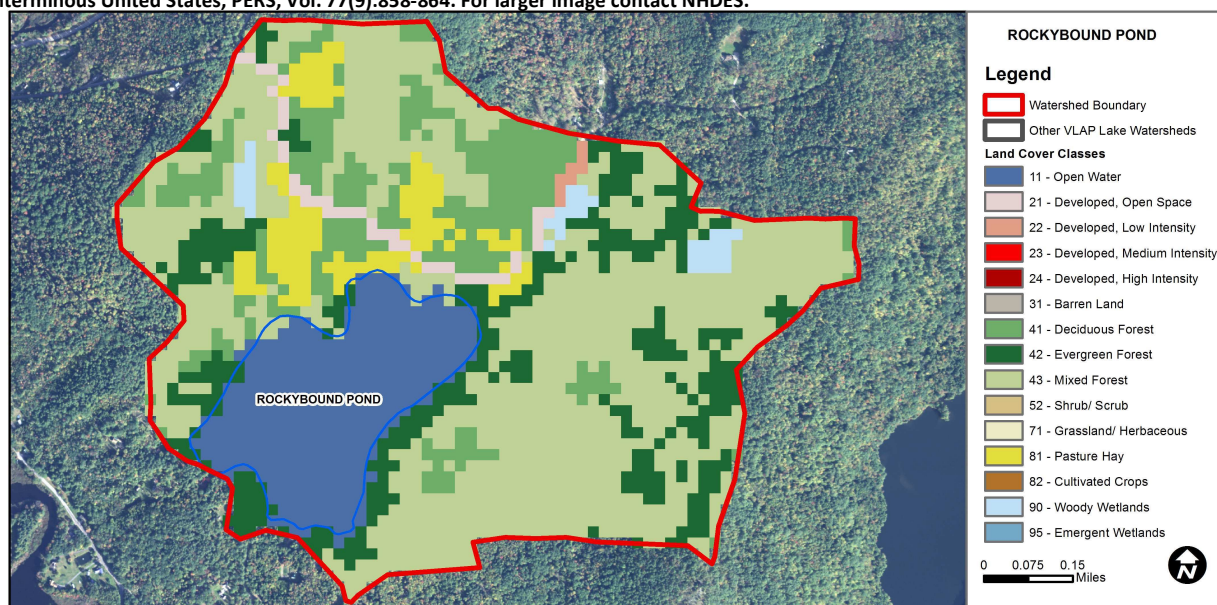
Curly Leaf Pondweed

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Good	>=5 samples and median is < threshold but > 1/2 threshold value.
	pH	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	D.O. (mg/L)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	D.O. (% sat)	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	Chlorophyll-a	Good	>=5 samples and median is < threshold but > 1/2 threshold value.
Primary Contact Recreation	E. coli	Very Good	All bacteria samples <75% of geometric mean criteria, but not enough to calculate geometric mean. Or, all bacteria samples are < single sample criteria and calculated Geometric means are less than geometric mean criteria.
	Chlorophyll-a	Very Good	At least 10 samples with 0 exceedances of criteria.

### WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	14.8	Barren Land	0	Grassland/Herbaceous	0
Developed-Open Space	1.97	Deciduous Forest	13.46	Pasture Hay	5.88
Developed-Low Intensity	0.36	Evergreen Forest	15.12	Cultivated Crops	0
Developed-Medium Intensity	0	Mixed Forest	46.84	Woody Wetlands	1.71
Developed-High Intensity	0	Shrub-Scrub	0	Emergent Wetlands	0



# VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS

## ROCKYBOUND POND, CROYDON, NH

### 2012 DATA SUMMARY

#### OBSERVATIONS AND RECOMMENDATIONS (Refer to Table 1 and Historical Deep Spot Data Graphic)

- ♣ **CHLOROPHYLL-A:** Chlorophyll levels increased slightly as the summer progressed but were less than the NH lake median. A cyanobacteria bloom was noted in August lasting from 8/11 – 8/18. Historical trend analysis indicates chlorophyll levels tend to fluctuate from year to year.
- ♣ **CONDUCTIVITY/CHLORIDE:** Conductivity levels were slightly greater than the NH lake median.
- ♣ **E. COLI:** E. coli was not present in the W3 Homa sample.
- ♣ **TOTAL PHOSPHORUS:** Epilimnetic (upper water layer) phosphorus was low and less than the NH lake median. Historical trend analysis indicates the epilimnetic phosphorus fluctuates from year to year. Hypolimnetic (lower water layer) phosphorus was slightly elevated throughout the summer potentially due to natural processes, however organic matter and sediment were noted in the July and August samples which could have contributed to the elevated phosphorus. All other stations experienced low phosphorus levels throughout the summer.
- ♣ **TRANSPARENCY:** Transparency decreased slightly as the summer progress due to the increased algal growth. Transparency improved slightly from 2011 and was greater than the NH lake median. Historical trend analysis indicates a significantly decreasing (worsening) transparency trend since monitoring began.
- ♣ **TURBIDITY:** Hypolimnetic turbidity was elevated in August and sediment was noted in the sample. All other stations experienced low turbidity.
- ♣ **pH:** pH levels historically fluctuate to below desirable at many stations.
- ♣ **RECOMMENDED ACTIONS:** The presence of a cyanobacteria bloom in August is concerning. Please notify DES of any potential cyanobacteria blooms so we can collect a sample and perform microscopic identification to determine whether the cyanobacteria are potentially toxic. The worsening transparency trend is concerning and may be related to an increase in suspended sediments from stormwater runoff. Educate watershed residents on ways to reduce stormwater runoff and implement residential stormwater improvement projects utilizing DES' "NH Homeowner's Guide to Stormwater Management". Keep up the great work!

Station Name	Table 1. 2012 Average Water Quality Data for ROCKYBOUND POND								
	Alk.	Chlor-a	Cond.	E. Coli	Total P	Trans.		Turb.	pH
	mg/l	ug/l	uS/cm	#/100ml	ug/l	m		ntu	
						NVS	VS		
Deep Epilimnion	7.87	2.99	58.9		7	4.97	5.18	0.90	6.59
Deep Metalimnion			58.5		9			1.02	6.60
Deep Hypolimnion			69.3		21			5.82	6.30
W1 Public Beach/Inlet			59.2		7			0.92	6.53
W3 Homa			63.5	0	7			1.09	6.52
W5 Lewis			62.9		7			0.79	6.63
W6 Outlet			66.1		8			0.73	6.54
W8 Rizza Inlet			63.2		6			0.76	6.75

**NH Median Values:** Median values for specific parameters generated from historic lake monitoring data.

**Alkalinity:** 4.9 mg/L

**Chlorophyll-a:** 4.58 mg/m<sup>3</sup>

**Conductivity:** 40.0 uS/cm

**Chloride:** 4 mg/L

**Total Phosphorus:** 12 ug/L

**Transparency:** 3.2 m

**pH:** 6.6

**NH Water Quality Standards:** Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.

**Chloride:** < 230 mg/L (chronic)

**E. coli:** > 88 cts/100 mL – public beach

**E. coli:** > 406 cts/100 mL – surface waters

**Turbidity:** > 10 NTU above natural level

**pH:** 6.5-8.0 (unless naturally occurring)

#### HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation
Chlorophyll-a	Variable	Data fluctuate annually, but are not significantly increasing or decreasing.
Transparency	Degrading	Data significantly decreasing (worsening).
Phosphorus (epilimnion)	Variable	Data fluctuate annually, but are not significantly increasing or decreasing.

This report was generated by the NH DES Volunteer Lake Assessment Program (VLAP). For more information contact:  
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Historical Deep Spot  
Chlorophyll-a, Epilimnetic Total Phosphorus & Transparency Data

